

What is claimed is:

1. A method comprising:
identifying a variable associated with one or more machine readable instructions;
determining an estimated value of the variable based on a pattern;
using the estimated value of the variable based on the pattern to generate a value prediction instruction to predict a run-time value; and
combining the value prediction instruction with the one or more machine readable instructions.
2. A method as defined in claim 1, further comprising:
determining if the run-time value matches the estimated value; and
generating a value correction instruction to correct the run-time value if the run-time value does not match the estimated value.
3. A method as defined in claim 2, further comprising combining the value correction instruction with the one or more machine readable instructions to be executed subsequent to an invocation of a speculative parallel thread.
4. A method as defined in claim 1, further comprising combining the value prediction instruction with the one or more machine readable instructions to be executed prior to an invocation of a speculative parallel thread.
5. A method as defined in claim 4, wherein the invocation of the speculative parallel thread comprises a fork function call instruction including a starting location.
6. A method as defined in claim 1, wherein the variable is associated with a data dependency.

7. A method as defined in claim 1, wherein the one or more machine readable instructions comprises a source code file.
8. A method as defined in claim 7, wherein the source code file comprises a high-level instruction.
9. A method as defined in claim 1, wherein the pattern comprises a predetermined pattern.
10. A method as defined in claim 9, wherein the predetermined pattern comprises at least one of a constant pattern, a last-value pattern, and a constant-stride pattern.
11. A method as defined in claim 10, wherein the constant pattern is based on a most frequently occurring value.
12. A method as defined in claim 1, wherein the estimated value is created by a profiling technique.

13. An apparatus comprising:
- a memory; and
- a processor coupled to the memory and configured to:
- identify a variable associated with one or more machine readable instructions;
- determine an estimated value of the variable based on a pattern;
- use the estimated value of the variable based on the pattern to generate a value prediction instruction to predict a run-time value; and
- combine the value prediction instruction with the one or more machine readable instructions.
14. An apparatus as defined in claim 13, wherein the processor is further configured to:
- determine if the run-time value matches the estimated value; and
- generate a value correction instruction to correct the run-time value if the run-time value does not match the estimated value.
15. An apparatus as defined in claim 14, wherein the processor is further configured to combine the value correction instruction with the one or more machine readable instructions to be executed subsequent to an invocation of a speculative parallel thread.
16. An apparatus as defined in claim 13, wherein the processor is further configured to combine the value prediction instruction with the one or more machine readable instructions to be executed prior to an invocation of a speculative parallel thread.

17. An apparatus as defined in claim 16, wherein the invocation of the speculative parallel thread comprises a fork function call instruction including a starting location.
18. An apparatus as defined in claim 13, wherein the variable is associated with a data dependency.
19. An apparatus as defined in claim 13, wherein the one or more machine readable instructions comprises a source code file.
20. An apparatus as defined in claim 19, wherein the source code file comprises a high-level instruction.
21. An apparatus as defined in claim 13, wherein the pattern comprises a predetermined pattern.
22. An apparatus as defined in claim 21, wherein the predetermined pattern comprises at least one of a constant pattern, a last-value pattern, and a constant-stride pattern.
23. An apparatus as defined in claim 22, wherein the constant pattern is based on a most frequently occurring value.
24. An apparatus as defined in claim 13, wherein the estimated value is created by a profiling technique.

25. A machine readable medium having instructions stored thereon that, when executed, cause a machine to:

- identify a variable associated with one or more machine readable instructions;
- determine an estimated value of the variable based on a pattern;
- use the estimated value of the variable based on the pattern to generate a value prediction instruction to predict a run-time value; and
- combine the value prediction instruction with the one or more machine readable instructions.

26. A machine readable medium as defined in claim 25, having instructions stored thereon that, when executed, cause the machine to:

- determine if the run-time value matches the estimated value; and
- generate a value correction instruction to correct the run-time value if the run-time value does not match the estimated value.

27. A machine readable medium as defined in claim 26, having instructions stored thereon that, when executed, cause the machine to combine the value correction instruction with the one or more machine readable instructions to be executed subsequent to an invocation of a speculative parallel thread.

28. A machine readable medium as defined in claim 25, having instructions stored thereon that, when executed, cause the machine to combine the value prediction instruction with the one or more machine readable instructions to be executed prior to an invocation of a speculative parallel thread.

29. A machine readable medium as defined in claim 28, wherein the invocation of the speculative parallel thread comprises a fork function call instruction including a starting location.

30. A machine readable medium as defined in claim 25, wherein the variable is associated with a data dependency.

31. A machine readable medium as defined in claim 25, wherein the one or more machine readable instructions comprises a source code file.

32. A machine readable medium as defined in claim 31, wherein the source code file comprises a high-level instruction.

33. A machine readable medium as defined in claim 25, wherein the pattern comprises a predetermined pattern.

34. A machine readable medium as defined in claim 33, wherein the predetermined pattern comprises at least one of a constant pattern, a last-value pattern, and a constant-stride pattern.

35. A machine readable medium as defined in claim 34, wherein the constant pattern is based on a most frequently occurring value.

36. A machine readable medium as defined in claim 25, wherein the estimated value is created by a profiling technique.